CLAIMS

1. An evaluating apparatus comprising a digital filter for filtering a signal in accordance with one or more tap coefficients of the digital filter,

    the evaluating apparatus further comprising:

    a detecting section for detecting an index to be used for evaluating quality of the signal based on the filtered signal; and

    a controlling section for controlling the one or more tap coefficients of the digital filter to be within a predetermined range such that a value of the detected index includes an optimal value of the index.

2. An evaluating apparatus according to claim 1, wherein

    the digital filter includes a plurality of taps, and

    the controlling section controls a plurality of tap coefficients of the plurality of taps such that the plurality of tap coefficients are symmetrical.

3. An evaluating apparatus according to claim 1, further comprising:

    a maximum likelihood decoding section for performing a maximum likelihood decoding on the filtered signal and for generating a decoded signal indicating a result of the maximum likelihood decoding, wherein

    the detecting section detects the index based on the filtered signal and the decoded signal,

    the digital filter includes a first tap, a second tap, a third tap, a fourth tap, and a fifth tap, and

    the controlling section controls tap coefficient k_0 of the first tap, tap coefficient k_1 of the second tap, tap coefficient k_2 of the third tap, tap coefficient k_3 of the

fourth tap, and tap coefficient k_4 of the fifth tap, in accordance with the following Expressions 14, 15, and 16:

Expression 14:

$$k_0 = k_4 = \frac{1}{6 + 2(\frac{1}{r} + r) + r^2 + \frac{1}{r^2}}$$

Expression 15:

$$k_1 = k_3 = \frac{2(\frac{1}{r} + r)}{6 + 2(\frac{1}{r} + r) + r^2 + \frac{1}{r^2}}$$

Expression 16:

$$k_2 = \frac{4 + r^2 + \frac{1}{r^2}}{6 + 2(\frac{1}{r} + r) + r^2 + \frac{1}{r^2}}$$

where a frequency characteristic of the digital filter is controlled by r parameter.

4. An evaluating apparatus according to claim 3, wherein a relationship of $0.21 \leq r \leq 0.27$ is satisfied.

5. An evaluating method comprising the steps of:
filtering a signal in accordance with one or more tap coefficients of a digital filter;
detecting an index to be used for evaluating quality of the signal based on the filtered signal; and
controlling the one or more tap coefficients of the digital filter to be within a predetermined range such that

the detected index includes an optimal value of the index.